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The Library's Program for Awarding Grants

MARTIN MARC CUMMINGS, DIRECTOR 1964—

FOLLOWING the resignation of Frank Bradway Rogers from the directorship on August 31, 1963, Surgeon General Luther Terry asked Scott Adams to accept the post of Acting Director and to sit on a committee to nominate a new Director.¹ The committee, chaired by James Hundley of the PHS, considered nine persons from within the service and 19 from without. It finally selected Martin Marc Cummings, chief, Office of International Research and associate director for research grants, NIH. Terry appointed Cummings as the new Director of the Library. After accepting the post Cummings remained at NIH finishing his work while spending considerable time at the Library overseeing the final stages of the MEDLARS publication system. He became Director officially on January 1, 1964.

Cummings was born in Camden, New Jersey, on September 7, 1920. He received his B.S. degree from Bucknell in 1941 and M.D. degree from Duke in 1944. At Duke he became interested in diseases of the chest, particularly tuberculosis. This led him to accept a Public Health Service internship. He was assigned to the Boston Marine Hospital where, during his second year, he received a commission in the service and was placed in charge of the Tuberculosis Section.

In 1946 the PHS provided Cummings with specialized training in bacteriology and tuberculosis at the Michigan State Health Department, and overseas at the State Serum Institute of Denmark. It then assigned him to the Communicable Disease Center, Atlanta, to establish a tuberculosis research laboratory. At the neighboring Lawson Veterans Administration Hospital he had the opportunity to treat tuberculosis in veterans, and in 1949 he joined the staff to head the Tuberculosis Service and organize a laboratory for tuberculosis studies. Concurrently he taught medicine at Emory University School of Medicine.

The Veterans Administration asked Cummings to move to Washington in 1953 to become director of research services. Concurrently he lectured on microbiology at George Washington University School of Medicine. He also represented the Veterans Administration in meetings of the National Advisory

Martin Marc Cummings, appointed Director of the Library in 1964.



Health Council and thus became acquainted firsthand with the operations and administrators of the National Institutes of Health.

Wishing to return to research, in 1959 Cummings accepted the position of professor and chairman of the department of microbiology at University of Oklahoma. With assistance with grants from NIH he upgraded the department, but before long was lured back to Washington by James Shannon, Director of NIH, to head NIH's Office of International Research.

Upon assuming the directorship of the Library, Cummings moved rapidly to improve the scientific quality of MEDLARS, and have the recently developed computerized bibliographic system utilized and evaluated nationally and internationally. He began to broaden the Library's mission. Within a few years he obtained legislation for a grants program, inaugurated a research and development program, obtained authorization for a new building, organized a toxicology information program, directed the acquisition of a medical audiovisual organization, changed the Library's role in continuing education from passive to active, and encouraged broadening of the mission of the History of Medicine Division. He attracted experienced, intelligent and energetic associates to manage the new programs. He was successful in his relationships with his superiors in higher echelons of the Department and in the legislative branch, who respected his leadership of the Library. He served as Director of the Library longer than anyone other than his hero, John Shaw Billings.

Cummings' work in the Public Health Service, Veterans Administration, and University of Oklahoma was reflected in 68 articles and chapters he wrote

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on tuberculosis, sarcoidosis, microbiological technique, and other medical topics. He also coauthored a text, *Diagnostic and Experimental Methods in Tuberculosis*. From the National Library of Medicine he wrote on a variety of subjects, including NLM programs, library operations, biomedical communications, history, and administration.

Among the honors bestowed on Cummings for leadership in library affairs were six university degrees, the Superior and Distinguished Service awards of the Department of Health, Education and Welfare, the Distinguished Service Award of the College of Cardiology, an honorary fellowship in the College of Physicians of Philadelphia, an honorary membership in the Academy of Medicine of the Institute of Chile, and the Rockefeller Public Service Award, the most prestigious recognition that a Federal civil servant could receive.

BEGINNING OF THE GRANTS PROGRAM

It was inevitable that the Library would become involved with grants after it became a part of the Public Health Service and closely associated with the National Institutes of Health. The NIH had begun to award grants to assist research with a tiny sum of money in 1938. After World War II Congress increased the funds astronomically, from less than \$1 million in 1946 to \$63 million in 1956 to \$177 million in 1958. Every institute in NIH awarded grants for stimulating and supporting research in its area.

In 1959 the Library's Board of Regents learned that NIH was considering granting funds to two medical schools for the purpose of training librarians. During the Board's first meeting in 1960 Michael De Bakey, Surgeon General Leroy Burney, Director Rogers, and other members discussed the possibility of NLM's awarding grants for training librarians, research in history of medicine, preparing special bibliographic reviews, and other purposes. Rogers then decided to have plans drawn up for a program under which NLM would assist other medical libraries to improve their facilities and services.²

In the summer of 1960 Rogers asked the General Counsel of the Department of Health, Education, and Welfare if the Public Health Service Act permitted the Library to award grants.³ The counsel ruled that the act did not, and Rogers started on the long road that would lead to authority and funds.⁴ He had been looking for a person to become deputy director to assist with the management of the current work, now he also needed the deputy to plan "extramural" activities. He brought Scott Adams back from the National Science Foundation to the Library in this position, and assigned Estelle Brodman as Adams' associate. After Brodman resigned in 1962 to become librarian of Washington University Medical School, Daniel Bailey assisted Adams.

While facilities for medical research, education, and health care had been greatly expanded and improved since the mid-1940's, most medical libraries had been ignored by the schools and institutions they served. Federally sponsored research in the Veterans Administration, National Institutes of Health, universities, and institutions had created a continuing overload on libraries in

the 1950's. Libraries had not had sufficient funds to acquire, process, and store the large amount of books and journals wanted by users. Libraries had not been planned with sufficient storage space. Many were overcrowded, and some had had to store publications in warehouses, whence it took hours for retrieval. There was a shortage of professional medical librarians. Relatively few libraries were able to serve efficiently and rapidly as conduits for the transmission of information between researcher and applier. A Senate document in 1960 reported that all medical schools needed urgently an "improvement of their libraries, which are essential to the functions of education, research, and good medical care."⁵

Adams and Brodman had no difficulty in identifying deficiencies in libraries. They outlined a program to support traditional publication media (journals, reviews, and translations), to assist abstracting and indexing services, to further the training of medical librarians, and to strengthen the facilities, resources, and services of medical libraries through which information was made available locally to researchers. They also proposed support of investigations into the principles on which new and improved systems of communication might be built. To accomplish these goals, they drafted programs in the areas of publications and translation; fellowships, library facilities and resources; education and training; and research and development. The Board of Regents approved the scope of the program in November 1960, and a request for funds was included in the preliminary budget for fiscal year 1963.⁶

Adams and Brodman continued to compile information to reinforce the Library's request that it be given authority and funds to assist other medical libraries. They wrote reports and articles, and Brodman arranged a contract with Harold Bloomquist of Harvard Medical School to survey medical libraries and to describe what improvements were needed.⁷

TRANSLATIONS

In the meantime events at the National Institutes of Health resulted in the transfer of a small grants program to the Library. In July 1956, directed by the Senate Committee on Appropriations to make "available to American scientists the full findings of Russian scientists," the National Institutes of Health in cooperation with the National Science Foundation set up the Russian Scientific Translation Program. Scott Adams, librarian of NIH at the time, directed the program under which Russian medical and related publications were translated, reviewed, and abstracted in English. The work was done in Poland and Israel, some of it financed by grants and contracts, some by funds available through Public Law 480, the Agriculture Trade Development and Assistance Act of 1954, amended in 1958. Under this law foreign currencies that accrued to the credit of the United States from the sales of surplus agricultural commodities could be used to "collect, collate, translate, abstract, and disseminate scientific and technological information."

Adams left the NIH library in 1959 to take charge of the National Science

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Foundation's foreign science information program. His departure led to a debate by NIH, PHS, and NLM about the future of the Russian scientific translation program. The portion of the program financed by Public Law 480 funds was transferred to the Library in August 1959; the portion paid for by grants was retained by NIH with the expectation of transferring it when the Library moved to its new building in Bethesda. But before the move took place the transfer was made on July 1, 1961, even though the Library did not have legislative authority to make grants.⁸ Director Rogers felt that the use of grants to finance translations was not proper, and in 1962 he directed that they be replaced by contracts.

PROGRESS TOWARD A LAW

The grants for translation had no effect on the efforts to obtain authority. Adams and Brodman drafted and redrafted specifications for legislation, and compiled supporting documents. Surgeon General Luther Terry, a member of the Board of Regents and a supporter of the program, approved the specifications, but then there arose in his office a disagreement over the scope of the PHS's mission in medical communications. Legislation needed by the Library could not be written until Terry's staff felt they were on firm ground. Furthermore, it appeared that some of the Library's proposed plans might duplicate or impinge on missions of other organizations within the service. The National Institutes of Health, in particular, was entering the field of science communication and might limit the Library's activities. To obtain the views and ideas of all the organizations in the service on communications, the Surgeon General convened a conference on the subject.⁹ Finally Terry's staff defined the activities in which the PHS could engage. They drew a line between the work of NLM and NIH and pointed out the areas in which the Library could give grants under authority of the Public Health Service law. On March 29, 1963, Terry delegated authority to the Library to support training, research fellowships, and research grants.¹⁰ But the Surgeon General's staff was still not completely satisfied about the limits of the authority that the service, and thus the Library, possessed to give grants in the field of medical communication. At last the Secretary of HEW asked the Comptroller General of the United States for his interpretation. On March 4, 1964, the Comptroller ruled that the PHS law permitted the Surgeon General to delegate authority to the Library to make grants for activities relating to the communication of results of medical research.¹¹

In the meantime Rogers had retired and been succeeded by Martin Cummings, who believed strongly in a grants program. In January 1964 Cummings and Surgeon General Terry talked with Senator Lister Hill about their hope of gaining such a program for NLM. Senator Hill liked the concept and asked Cummings to have specifications drafted for the legislation. Two months later, following the Comptroller's decision, Cummings began to mobilize a staff to develop and manage a full grants program. He recruited Marjorie Wilson from

NIH, Carl Douglass from the National Institute of Arthritis and Metabolic Diseases, and Mary Corning from the National Science Foundation, as the nucleus. He reorganized the Library's divisions into two groups, one headed by Wilson to operate the Extramural Program, or EMP as it was frequently called, one headed shortly thereafter by Joseph Leiter to operate the Intramural Program. He set up a Publications and Translations Division, headed by Corning, and a Research and Training Division, headed by Douglass, and placed them in the former. He placed the traditional library divisions and a new Data Processing Division in the latter.¹²

The Publications and Translations Division was to make contracts, grants, and Public Law 480 agreements for translation and publication of medical writings overseas and in the United States. The Research and Training Division was to make contracts and grants for research in the management of biomedical literature, for training librarians and other specialists in the communication of medical knowledge, and for providing scholarships in history of medicine and other fields. The only part of the Extramural Program that functioned was the Publications and Translations Division, continuing the work that had begun several years before financed by appropriated and PL 480 funds.¹³ The other part of EMP remained in the planning stage, waiting for funds that the staff hoped would be appropriated soon.

GRANTS FOR HISTORY OF MEDICINE

Money and authority for the first grants awarded by the Library arrived unexpectedly. On February 28, 1964, Cummings appeared before a House Subcommittee on Appropriations to testify on the PHS appropriation bill. Representative John Lesinski wondered if it might not be possible to rediscover forgotten, useful remedies by delving into the past, and he suggested that funds be given to the Library to undertake research into history of medicine.¹⁴

John B. Blake, chief of the History of Medicine Division, quickly planned a program of in-house and grants activities that could be carried out for \$180,000. The Committee on Appropriations added this sum to the Library's budget.¹⁵ Congress passed the appropriation bill, and the President signed it on September 19.

The Library allotted \$120,000 of the appropriation to history grants, and \$60,000 to programs of the History Division. The Library set up procedures to process grant applications and arranged to accept applications in the history of life sciences from NIH, which had been administering them. The Secretary of HEW on October 2 designated the appointed members of the Board of Regents as the Advisory Council to review and recommend applications. The Library now awarded its initial grants, six for research, one for a fellowship, and two for training programs, all in history of medicine.¹⁶

THE MEDICAL LIBRARY ASSISTANCE ACT

The Library still did not have authority to award grants in all areas needed by medical libraries. The Bureau of the Budget and the Office of Science and

Technology opposed new legislation because they did not think it was necessary. They wanted NLM to apply its authority as a part of the Public Health Service to award grants, and they wanted the Library to use pending legislation which would be administered by the Office of Education, designed to assist libraries in general.

The legislation that ultimately gave NIH authority to award grants began in early 1964 when Cummings talked with Senator Lister Hill about NLM's hopes to assist other libraries. Senator Hill asked Cummings to visit him in Alabama during the congressional Easter recess to discuss the plans in detail. Cummings and Wilson spent two and a half days with Hill at the University of Alabama Medical School going over the proposed extramural program. The Senator liked the conception. He asked Cummings for a draft of a bill, and he suggested that he enlist the aid of Representative Oren Harris.

During much of the remainder of 1964 Wilson, Douglass, and their associates continued to develop the program, working with representatives of medical schools, dental schools, pharmacy schools, hospitals, and government health agencies to catalog the deficiencies and needs of medical libraries. They drew ammunition from the report of Harold Bloomquist, from the report of the President's Commission on Heart Disease, Cancer, and Stroke, and from conferences on the importance of libraries in research, training, and the everyday practice of medicine.¹⁷

Wilson also spent considerable time with Elizabeth Chase, a DHEW attorney, outlining a bill. In the autumn of the year a series of meetings was held in the Surgeon General's office to coordinate the terms and conditions of the proposed Medical Library Assistance Act with all other segments of the PHS. In December Senator Hill called Cummings and Wilson to his office and informed them that he intended to introduce the legislation in the next session of Congress. He did this on January 19, 1965. Representative Harris and later Representative John Fogarty introduced parallel bills.¹⁸

Rarely did legislation receive such wide and unanimous support in the health professions. Medical, dental, pharmaceutical, veterinary, optometry, library, and specialized organizations testified in favor of the proposed law at Senate hearings in June and House hearings in September. Medical schools, universities, the American Public Health Association, American Association of Colleges of Pharmacy, American Nurses' Association, American Hospital Association, and other groups sent messages of support to congressional committees. James Shannon, Director of NIH, had pessimistically estimated that it would take 4 years for passage of legislation, but Cummings, Wilson, and Douglass were so persuasive that the legislation moved through Congress without difficulty and was signed by President Johnson on October 22, 1965.¹⁹

THE GRANTS PROGRAMS

After enactment of the law Wilson, Douglass, and David Kefauver collaborated with the PHS General Counsel in writing regulations to implement the legislation. The staff drafted and published informational materials, policy

guidelines, and application forms and other necessary documents. The Board of Regents appointed a Subcommittee for Extramural Programs to facilitate review of the policy and regulations. The Board approved the drafts on March 21–22, 1966, the PHS and DHEW followed, and the *Federal Register* published them on July 13.

Wilson and her associates developed a budget, planned for short- and long-range programs, established advisory committees, recruited employees, appointed consultants, and carried out all the other activities necessary to prepare for the award of grants. They drew up agreements with the Association of American Medical Colleges to establish functional guidelines for the construction of health service libraries, and with the Institute for the Advancement of Medical Communication to develop objective standards based on the services to users by which to measure library performance. They held many meetings with representatives of institutions planning to apply for grants.

The law specified that a Medical Libraries Assistance Advisory Board be established to review and approve grants. The Surgeon General designated the Board of Regents as this Advisory Board. The Board was aided in its deliberations by reports of committees, appointed by Director Cummings, that provided initial review of applications.

The Medical Library Assistance Act of 1965 had a life of 5 years. It authorized an appropriation of \$105 million for programs to finance construction of medical libraries, train librarians and other information specialists, expand and improve medical library resources, stimulate research and development in medical library sciences, support biomedical publications, establish regional medical libraries, and set up branches of NLM if necessary.²⁰

The staff began implementing the provisions of the act with one exception: the construction of medical libraries. The Bureau of the Budget was not convinced that the Library's estimate of the need for construction was realistic. It asked the Office of Science and Technology to prepare an independent estimate. The office hired a contractor to design a national library network and information system, which was more than the Bureau had asked for. When the contractor completed its report the Library and Regents agreed with some portions but disagreed with the concept, which called for an expensive, federally operated system of medical libraries. The Bureau, satisfied with the Library's viewpoint, released the funds for construction.

For the construction of libraries the act authorized an expenditure of \$10 million each fiscal year from 1967 to 1970, or a total of \$40 million. Congress appropriated only \$11.25 million. With this money NLM provided funds to nine medical schools, to Auburn University School of Veterinary Medicine, and to Southern College of Optometry. Grants to medical schools ranged from \$536,331 to Brown University to \$1,765,636 to Jefferson University. The 11 schools acquired 334,121 square feet of library space having a capacity of 1,305,000 volumes. While 11 schools were helped, NLM estimated that from 25 to 40 other institutions needed funds to improve their library facilities.



Library of Wayne State University Medical School, a regional medical library erected with assistance from a construction grant.

The Library did not retain management of the construction program very long. On April 1, 1968, NLM was transferred from the PHS Surgeon General's Office to the National Institutes of Health. James Shannon, Director of NIH, on October 3 appointed a task force to consider the advisability of placing all of NIH's construction grant programs in one NIH division. The task force recommended that this be done. On December 26 Shannon delegated authority for medical library construction grants to NIH's Bureau of Health Manpower. This action removed the everyday operation of the construction grants from NLM, but the latter still participated in the program. It defended the budget for library construction grants, it provided the Bureau with technical guidance, and the Board of Regents cooperated with the Bureau's National Advisory Council in reviewing and approving all NIH construction grants involving libraries.

For research and development in the library field Congress appropriated \$6 million of the authorized \$15 million. The Library grouped proposals for R&D grants into three categories: library services, operations, and manpower; biomedical communications; and history of life sciences. Two million dollars were awarded for 14 projects in the first category, \$3 million for 43 projects in the second, and \$1 million for 46 projects in the third. A wide variety of endeavors were financed, among them the development of an on-line computer serials control system, a study of communication patterns among researchers, development of standard nomenclature, evaluation of self-instruction materials, and language analysis for information retrieval.

Resource grants were designed to help medical libraries acquire needed publications and equipment, process library materials, and adopt new technologies. It had been estimated by Cummings that the Nation's medical libraries

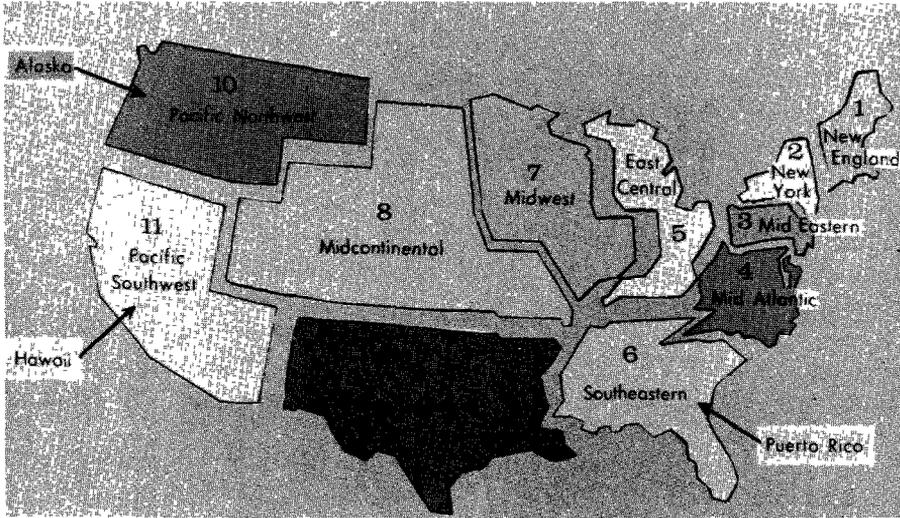
needed \$100 million for these purposes. The act authorized the expenditure of \$15 million to provide grants, but Congress appropriated only \$11.8 million. These grants were looked upon as a means of stimulating private support for libraries. To accomplish this the act provided a formula for determining the amount of each grant, the amount depending upon the funds that the institution had been devoting to its library. The NLM also adopted a policy of giving priority to libraries that served the most users. Because of these two criteria, the largest grants went to the largest libraries, since these had the largest resources and the most customers. Assisted by resource grants were 402 libraries, 192 of which were in hospitals, 93 in medical schools, 29 in pharmacy schools, 16 in dental schools, 16 in societies, 7 in veterinary medical schools, and the remainder in other kinds of institutions. The grantees spent approximately one-half of the resource money for publications, one-quarter for employees, one-sixth for equipment, and the remainder for other purposes.

Congress authorized \$5 million but appropriated only \$4.5 million for training grants. The Library awarded grants to library interns who needed fundamental training, to established librarians who desired training in modern techniques of communication, and to persons who wanted to pursue advanced training in library science. Grants supported candidates for master's degrees in biomedical communication and candidates for doctor's degrees in health information research. One specialized program that received support provided instruction for editors of medical publications. Approximately 350 persons benefited from these grants, receiving training that enabled many of them to step upward into key positions in libraries.

The Library dispensed an appropriated \$2.3 million, \$2.7 million less than authorized, to assist biomedical publications. These funds supported 43 projects for the preparation and publication of monographs, critical reviews, histories of medicine, and works dealing with libraries and biomedical communications; for the compilation of secondary literary tools such as atlases, catalogs, and bibliographies; for the translation of foreign medical books; and for temporary support of journals with innovative approaches.

The act authorized \$2.5 million to support physicians, dentists, and other health professionals while writing definitive works needed in medicine and related fields. The Library received less than one-tenth of this, \$200,000, to underwrite these "special scientific projects," as they were called. The Library used these funds to award grants to 10 fellows, who prepared studies on topics such as the discovery, regulation and use of drugs, and interorganizational aspects of urban community health.

The most revolutionary grant was for the establishment of regional medical libraries. The Library was authorized to award funds to a number of institutions in return for their assistance in serving patrons within their regions. This provision was placed in the law as a result of ever-increasing demands for NLM services during the previous two decades. The number of requests for inter-library loans, for example, had become so voluminous NLM either had to



The Regional Medical Library Network.

expand or persuade other libraries to share the load. The latter could be done by offering funds to strategically placed large libraries if they would agree to provide service to patrons and to smaller libraries within their own and neighboring states.

The idea of regional library cooperation was not unique to NLM staff members, but they saw the need for such cooperation early, and they developed the concept into a practical, nationwide system. The Regional Medical Library system as it finally evolved, was composed of four tiers of libraries. The first tier was made up of thousands of community hospital libraries, junior college libraries, and other local libraries that would provide primary service. NLM would help hospitals establish and strengthen libraries through its grants program. The second tier was composed of approximately 125 resource libraries, generally medical school or society libraries, that would assist local libraries when the latter did not have books or journals requested by patrons. The third tier was composed of 11 regional medical libraries with extremely large collections and facilities, capable of reinforcing the resource libraries in their areas. The fourth tier was NLM, the library of last resort, ready to supplement the collections and services of regional libraries.

Initial planning of the system, both regionally and nationally, was difficult because of the dearth of information about resources and services. With the assistance of medical associations NLM collected statistical data for each state, including the number and percent of professional health workers, distribution of health schools, facilities of medical school hospitals, and resources of major medical libraries. Tentative plans for possible systems were then drawn up.

It was estimated that funds available under the MLA act were sufficient to

support only 10 regional libraries (NLM also acted as a regional library). Therefore each regional library would have to serve a relatively large proportion of the Nation's health workers. The Francis A. Countway Library of Medicine, of the Boston Medical Library and Harvard University, submitted the first application for a regional grant. In October 1967 NLM awarded \$104,872 (more later) to Countway to enable it to service the New England region, composed of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island, through local medical libraries. Almost 3 years later, in July 1970, NLM awarded the final grant to the Health Sciences Library of the University of Nebraska Medical Center to enable it to serve the midcontinental region, comprising Colorado, Kansas, Missouri, Nebraska, South Dakota, Utah, and Wyoming. Each of the 11 libraries managed and coordinated services within its region and participated with other regional libraries and with NLM on continuing plans for the entire system.

Congress authorized an expenditure of \$12.5 million for regional libraries but appropriated only 38 percent of that sum. Grants to libraries ranged from \$1.02 million to Countway, serving New England, to \$178,000 to the University of Texas Southwestern Medical School serving users in five states.

All-in-all, between FY 1966 and FY 1970 Congress appropriated a total of \$40.8 million for the grants program, approximately 39 percent of the authorized \$105 million. With those funds the Library was able to assist 604 projects for the improvement of biomedical information, but there were scores of other worthy projects that could not be aided.

The grant program was an experiment. For the first time the government, through NLM, helped medical libraries develop themselves, and form and cooperate in a national network. The trial was successful. The health professions were unanimous in asking Congress to renew the legislation, and Congress did not hesitate to do so.

EXTENSIONS OF THE MEDICAL LIBRARY ASSISTANCE ACT

Through experience the extramural staff expected that some parts of the program would be improved if the Library were given authority to award grants on a different basis or for different reasons. In 1969, when Cummings requested Congress to extend the life of the act, these improvements were considered by those who drafted the new legislation.

The program had been successful in upgrading medical libraries, and several Congressmen willingly sponsored bills to prolong the law. One bill proposed to continue the act for 3 years, without changes in the provisions. Three other bills would have extended the act for different lengths of time, with changes. The Administration recommended an extension of 1 year in order to allow the Department of Health, Education, and Welfare an opportunity to review all grant programs, as directed by President Nixon, in order to determine whether it would be more economical or efficient to consolidate closely related programs. But both Houses of Congress preferred and passed a 3-year extension with a

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few changes. The President approved the Medical Library Assistance Extension Act of 1970 on March 13, 1970.²¹

The Extension Act of 1970 provided modest increases in authorized funds for medical library construction, manpower development, resource grants, and regional libraries. It authorized appropriations of \$23.5, \$25.5, and \$27.5 million for the first, second, and third years, compared with \$21 million per year under the original law. The total authorized for the 3-year period was \$76.5 million; Congress actually appropriated \$19.506 million. The act gave Director Cummings leeway to finance desirable projects that might arise unexpectedly by permitting him to transfer 10 percent of the funds from one program to a different program, as long as the amount transferred did not exceed 20 percent of the amount in the receiving category.

Before the Extension Act of 1970 had run its course, Cummings requested that the law be renewed again. He suggested an extension of 5 years and minor modifications in the provisions. In 1972 Congressmen introduced bills on behalf of the Library, Senator Edward Kennedy sponsoring a measure to renew the law for 1 year. Witnesses who testified at hearings recommended that the grants program be continued for periods ranging from 3 to 5 years. The Senate subcommittee handling the legislation compromised on an extension of 4 years. The Senate passed a bill in September 1972, but Congress adjourned before the House had time to vote, and the measure expired.²²

In the spring of 1973 several representatives and senators introduced bills designed to carry on the Extramural Program. Both Houses of Congress agreed on legislation and the President signed the Health Programs Extension Act of 1973 on June 18, 1973. This law continued the Library's authority to award funds for all programs, except construction, for 1 year, through June 30, 1974. The act authorized an appropriation of \$8,442,000, Congress gave \$7,029,000, and NLM awarded \$6,649,808 to grantees.²³

To prevent the act from expiring in the short span of a year, Cummings quickly asked for another continuation. In January 1974, with 5 months remaining, the House passed Representative Paul Rogers' bill to extend a number of health laws, among them the MLA act. The Senate passed an amended version of the bill in May. The House and Senate versions differed in the amount of appropriation, length of extension, and other provisions, but the branches of Congress compromised and passed the Health Services Research, Health Statistics, and Medical Libraries Act of 1974, signed by the President on July 23, 1974.²⁴ This law extended the grants program for 2 years, and it included a provision that the program would continue for a third year unless Congress decided otherwise. It repealed authority for construction. The law authorized appropriations of \$17.5 million for FY 1975, \$20 million for FY 1976, and \$20 million for FY 1977. It included an important new provision that gave the Director more flexibility in the use of funds by merging all appropriations into one and permitting him to allocate funds among the various grant programs as circumstances warranted.

PROGRESS OF THE GRANTS PROGRAMS, 1970-1976

In the renewal of the MLA legislation, Congress permitted the Library to broaden the scope of research and development grants by awarding funds to finance the cost of exhibiting and evaluating new devices or methods under operating conditions, so that practical ones could be recognized and adopted quickly by libraries. Desiring to focus research on promising areas, NLM set up review groups in 1974 and 1975 to discuss trends in information science and establish desirable goals for researchers. The participants believed that computers would be utilized more and more in transferring information. But-tressed by this opinion the Extramural Program thereafter encouraged projects that would lead to improvements in the storage and retrieval of biomedical information and to the rapid communication of data from biomedical researchers to physicians and educators. From the beginning of the Extramural Program to June 30, 1976, NLM awarded \$11,150,000 to support 339 research projects. Of these sums, \$5,150,000 was awarded for 263 projects under the extension acts, 1970 to 1976.

Under the extension acts the Library adopted the philosophy of awarding resource grants primarily to strengthen or establish community hospital libraries, particularly to make them active participants in the regional medical library network. Under the original act funds could be awarded only for the purpose of improving or expanding libraries: the extension act permitted funds to be awarded to create libraries. Under the original act the amount of a grant awarded to a library depended upon the size of that library's operating budget for the previous 3 years; the more a library spent the more it could receive. This provision funneled more money to the well-endowed libraries, less to the poor. The extension act repealed this provision, allowing small, poor libraries to be benefitted. All institutions that received grants had to promise to help support themselves with other funds.

The extension act set up two types of resource grants, the resource improvement grant and the resource projects grant. The former was a 1-year, non-renewable grant of \$3,000, awarded to institutions, such as community hospitals, to enable them to establish libraries. It was also awarded to small institutions to help them acquire books, journals, and other materials. The resource projects grant was a 1- to 3-year grant ranging from \$1,000 to \$200,000 a year, to stimulate libraries to improve or expand services. Recipients used these grants for a variety of activities, including the development of automated systems for library technical services, and the setting up of learning resource centers containing audiovisual materials, computer-assisted instruction programs, self-teaching modules, and other new devices. By the end of June 1976 the Library had awarded 2,588 resource grants with a value of \$23,605,000. Of these 2,223, totaling \$11,805,000, were awarded under the MLA extension acts.

The first extension act, 1970, increased the authorized appropriation for construction grants to \$11 million for FY 1971, \$12 million for FY 1972, and

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\$13 million for FY 1973. It also modified provisions of the original law. But the erection of libraries was expensive, austerity had arrived, and no money was appropriated for the purpose. The second extension act, 1973, did not continue NLM's authority to provide grants for construction, and the extension of 1974 repealed the authority.

The first extension act authorized NLM to support regional libraries with contracts as well as grants. Director Cummings had requested this change because the Library staff had learned, after starting the regional library network, that it was difficult with grants to bring about uniform practices, such as the formulation of MEDLARS searches and delivery of documents and photocopies, in 10 different institutions. The use of contracts permitted NLM to divide the funding of regional libraries into a service component, funded by contracts, and a research and development component, funded by grants. Under contracts all 10 libraries provided similar services under uniform policies, while simultaneously using grants they enjoyed considerable freedom in developing their resources and facilities. Furthermore contracts permitted NLM to coordinate the planning of the network. At first some regional libraries were unhappy over the switch from grants to contracts, but within a year or two they came to prefer contracts for support of services.

After the initial extension act was passed, NLM began to phase out grants for financing traditional education in librarianship. The Library decided to do this after surveys indicated that the shortage of medical librarians had decreased but that advanced training of librarians was desirable. Instead the Library began to assist health scientists to receive instruction in the use of computers in medical research, education, and health care. The first grants under this policy were awarded in 1972. Scores of institutions expressed interest in the new training grants program. Up to the end of fiscal year 1976 NLM awarded grants totaling \$9,256,000 for the training of 650 persons. Approximately half of this, \$4,756,000 was awarded under the MLA extension laws for the training of 300 persons.

Under the extension acts the Library continued to support health scientists in preparing scholarly book-length works on subjects of broad interest. The works of the grantees covered a wide range. Some of the topics were: the pathophysiology of respiratory disease; the causes and treatment of infectious diseases in humans; a systems analysis of health systems; a study of graduate education in occupational medicine; the development of medical education in the United States; and analysis and interpretation of the worldwide literature on malignancies occurring in the generation system or resulting from the reproductive process. By June 1976 NLM had awarded \$691,000 to assist 28 scholars. The extension acts contributed \$491,000 to 21 scholars.

The largest category of publications supported from 1965 to 1976 was secondary literature aids, such as atlases and bibliographies. The second largest was works on history of medicine. In 1974 the EMP shifted emphasis in assistance from secondary literature aids to critical reviews and biomedical mon-

ographs which identified the current state of research or practice in a certain field. At the same time the EMP decided to give priority to small grants and to writings requiring only publication costs. More grants were awarded for publication under the extension acts than under the original MLA act. By June 1976, 238 grants in the amount of \$5,191,000 had been awarded since the beginning of the program, 195 valued at \$2,891,000 under the extension acts.

The legislation that served as the foundation of the Library's grants program was referred to more than once as a "landmark."²⁵ "The act was well conceived," stated one librarian, "and in the short time of its existence, the beneficial effect is everywhere apparent."²⁶ The president of the American Optometric Association commented: "The Medical Libraries Assistance Act has been of immense benefit to schools and colleges of optometry, as well as other repositories of health and medical resources material."²⁷ The initial decade of the Library's effort to aid other medical libraries was an outstanding success. "The National Library of Medicine has made remarkable progress in its efforts to bring the Nation's medical library resources up to desirable levels," wrote a witness to the events.²⁸ A prominent dentist stated: "The programs of assistance for research, regional medical libraries, library resources, scientific publications, and training of personnel for the new technologies in the fields of bio-medical communication and information sciences have assisted immeasurably in improving the critical situation with regard to information handling and dissemination."²⁹ By 1976 thousands of hospital, medical school, society, and other health libraries had been strengthened, but many still waited for aid to improve themselves so they could provide the most rapid, complete service to users.

From the beginning of the program until the end of fiscal year 1976, the Library awarded grants as follows:

Program	Number	Amount
Construction	11	\$11,250,000
Training	148	10,309,000
Special Scientific Projects	28	691,000
Research	339	11,150,000
Publications	238	5,191,000
Resource	2,625	23,605,000
Regional Medical Library*	<u>89</u>	<u>18,714,000</u>
Totals	3,478	\$80,910,000

*Includes funding by contract.

Notes

¹ Adams was born on November 20, 1909. After graduating from Yale in 1930 he taught for a year and then entered the book trade. From 1939 to 1942 he attended Columbia University School of Library Science and also supervised the acquisition division of the Teachers College Library, Columbia. From 1942 to 1945 he supervised the order-catalog department of Prov-

idence, Rhode Island, Public Library. In 1945 he came to the Army Medical Library as chief of acquisitions, in January 1947 was promoted to the post of The Acting The Director (surely the oddest title ever in AML), and in October 1949 became assistant to the Director. He went to the National Institutes of Health as librarian in 1950, where he also organized and managed

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the Russian Scientific Information Program, to the National Science Foundation as director of the Foreign Science Information Program in 1959, and returned to NLM as deputy director for Extramural Programs in 1960. After retiring from NLM in 1970 he worked for the International Council of Scientific Unions and the Foreign Secretary, National Academy of Sciences, as their representative on the Joint ICSU/UNESCO UNISIST study. He then assisted Unesco, the National Science Foundation, and the Department of State on a variety of assignments relating to the initiation, development and management of the UNISIST program. He also served as chairman of the Committee on International Scientific and Technical Information Programs of the National Academy of Sciences during its efforts to define national interests in the international exchange of scientific information. He participated in bilateral activities through the academy, and the Agency for International Development relating to the development of national scientific information policy in Latin America, Taiwan, USSR, and Egypt.

² Information on the NLM grants program may be found in tape-recorded recollections of Martin Cummings, Frank B. Rogers, Scott Adams, Marjorie Wilson, and Carl Douglass. Information was also obtained from Jeanne Brand, Mary Corning, and Arthur Broering. Annual reports of the library, and *NLM News* contain data on the programs. The most informative documents are those of the Board of Regents, particularly the transcripts of meetings.

³ Memo, Director NLM to Surg. Gen., July 28, 1960, sub Request for opinion of General Counsel on legislative authority for proposed programs of National Library of Medicine.

⁴ Memo, Director NLM to Surg. Gen., Oct 8, 1960, sub Legislative authority for extramural programs, NLM.

⁵ Federal Support of Medical Research. Report of the Committee of Consultants on Medical Research to the Subcommittee on Departments of Labor and Health, Education, and Welfare of the Committee on Appropriations, United States Senate, 86th Cong., 2d sess., 1960. This report recommended that aid be extended to medical libraries.

For deficiencies in medical libraries see J. E. Deitrick and R. C. Berson, *Medical Schools in the United States at Mid-century* (N.Y., 1953). Scott Adams, "Medical Library Resources and their Development," *J. Med. Educ.* 38: 20-27 (1963), "Medical Libraries are in Trouble," *Libr. J.* 88: 2615-21 (1963), "Hospital Libraries Underdeveloped Base for Continuing Education," *Hospitals* 38: 52-4 (June 16, 1964).

⁶ Records of the Board of Regents, particu-

larly the meeting of Nov. 5, 1960, in which Adams discussed his and Brodman's proposed grants programs. The National Library of Medicine Proposed Extramural Program, Mar. 29, 1961. F. B. Rogers, "The National Library of Medicine's Role in Improving Medical Communication," statement to the Subcommittee on Departments of Labor, and Health, Education, and Welfare of the Appropriations Committee, U.S. House of Representatives (1962) copy in MS/C/295. "The National Library of Medicine and the Library Component in Communication," a report prepared for the House Committee on Interstate and Foreign Commerce (March 1963) copy in MS/C/295. Also, Rogers' statement in 87th Cong., 2d sess., Departments of Labor, and Health, Education, and Welfare Appropriations for 1963, part 2, pp. 746-58.

⁷ H. Bloomquist, "The Status and Needs of Medical School Libraries in the United States," *J. Med. Educ.* 38: 145-63 (1963).

⁸ Memo, Acting Surg. Gen. to Bureau and Division Chiefs, PHS, July 1, 1961, sub Transfer of responsibility for Russian scientific translation program.

⁹ *Surgeon General's Conference on Health Communications, November 1962* (DHEW, PHS, 1963).

¹⁰ PHS Delegation of Authority No. 40, Mar. 29, 1963.

¹¹ Letter, Joseph Campbell, Comptroller General of the United States, to Secretary DHEW, Mar. 4, 1964. Letter, Martin Cummings to F. Ellis Kelsey, Special Assistant to the Surgeon General for Scientific Communication, May 13, 1964. Records of the Board of Regents.

¹² Associate directors for the Extramural Program were Marjorie P. Wilson, March 1964-January 1968, David F. Kefauver, January 1968-March 1970, Leroy L. Langley, March 1970-February 1973, Ernest M. Allen, March 1973-

¹³ Details of the Scientific Activities Overseas (Special Foreign Currency Program), in which several segments of the Public Health Service, among them the Library, were involved may be found in the annual hearings of the PHS before the House Subcommittee on Appropriations. Information on the Library's role may also be found in the parts of the hearings devoted to the Library.

Titles of works translated and published under the Foreign Currency Program may be found in annual reports of the Library.

¹⁴ Representative Lesinski's remarks may be found in 88th Cong., 2d sess., Hearings before a Subcommittee of the Committee on Appropriations. Department of Health, Educa-

tion, and Welfare, Part 2, Public Health Service, pp 599-602

¹⁵ 88th Cong , 2d sess , Bill H R 10809, making appropriations for FY 1965, introduced Apr 10, 1964, pp 34-35 Report 1316, to accompany H R 10809, Apr 10, p 37

Blake's program may be found in the hearings cited in the previous note, pp 600-602

¹⁶ A list of the nine initial awards are in the annual report of Library for FY 1965

¹⁷ President's Commission on Heart Disease, Cancer, and Stroke, *A National Program to Conquer Heart Disease, Cancer, and Stroke* (GPO, vol 1, 1964, vol 2, 1965) Among other influential reports was the *Surgeon General's Conference on Health Communications, November 1962* (DHEW, PHS, 1963)

¹⁸ 89th Cong , 1st sess , Hearings on S 597, June 14 and 15, 1965 Hearing on H R 3142 and H R 6001, Sept 14, 1965, Serial 89-23

89th Cong , 1st sess , Bill S 597 "To amend the Public Health Service Act to provide for a program of grants to assist in meeting the need for adequate medical library services and facilities " Bill H R 3142 introduced by Harris Jan 19 Bill H R 6001 introduced by Fogarty, Mar 19 Senate Report 756 to accompany S 597 House Report 1026 to accompany H R 3142

¹⁹ Public Law 89-291, An act to amend the Public Health Service Act to Provide for a Program of Grants to Assist in Meeting the Need for Adequate Medical Library Services and Facilities Usually referred to as the Medical Library Assistance Act of 1965

²⁰ The authority to set up branches of NLM was placed in the law by the House to make certain that states, as Alaska and Hawaii, that might not be served by a regional library could be served by an NLM branch library

For an excellent assessment of the grants programs see Martin Cummings and Mary Corning, "The Medical Library Assistance Act an analysis of the NLM Extramural Programs, 1965-1970," *Bull Med Libr Ass* 59 375-91 (1971)

²¹ 91st Cong , 1st sess , Bill H R 11223 introduced by Harley Staggers, May 13, 1969 Bill S 2549, providing for a 5-year extension, introduced by Ralph Yarborough, July 7, 1969 Bill H R 11702, for a 1-year extension, introduced for the Administration by Harley Staggers, May 27 Bill S 2239, for a 1-year extension, introduced for the Administration by Peter Dominick, May 23 House Report 91-313, June 17, 1969, to accompany H R 11702 Senate Report 91-480, Oct 16, 1969, to accompany H R 11702 See debates in *Congressional Record*

Legislative History of the Medical Library Assistance Extension Act of 1970, P L 91-212, contains bills, reports, excerpts from *Congressional Record*, and the law NLM

²² Bill S 3752 introduced June 26, 1972, passed by the Senate, Aug 16, passed again as an amendment to S 3716, Sept 20 Senate Report 92-1004 to accompany S 3752

²³ 93d Cong , 1st sess , Serial 93-33, 1973 Health Programs Extension Act of 1973 Hearings Committee on Interstate and Foreign Commerce, House of Representatives on H R 5608 and S 1136 (and all identical bills) Bills to extend through fiscal year 1974 the expiring appropriations authorizations in the Public Health Service Act, the Community Mental Health Centers Act, and the Developmental Disabilities Services and Facilities Construction Act, and for other purposes, Mar 27, 28, 29, 1973

Programs for Health Services Research, Health Statistics and Medical Libraries Hearings on H R 7274 and H R 6387, H R 6586, and H R 6590 May 10, 11, and 14, 1973 Serial 93-32

Health Programs Extension Act of 1973 Public Law 93-45

²⁴ 93d Cong , 2d sess , Bill H R 11385, to amend the Public Health Service Act to revise the programs of health services research and to extend the program of assistance for medical libraries House Report 93-757 to accompany H R 11385

93d Cong , 2d sess , Bill S 2996 Health Legislation, 1974, Hearing Subcommittee on Health Committee on Labor and Public Welfare, United States Senate on S 2996 H R 10957, Feb 19, 1974 Senate Report 93-764 and Report 93-768 to accompany Bill H R 11385

House Report 93-1170, the conference report to accompany H R 11385 Public Law 93-353, Title II

²⁵ See, for example, statement by Robert C Berson, executive director, Assoc Amer Med Colleges, in House of Representative hearings on the MLA Act, Serial 91-93

²⁶ Ursula H Anker, librarian, Albany Medical College, quoted in reference above

²⁷ Communication by Robert E Day, president, Amer Optometric Assn , in Senate Report 93-764

²⁸ Ernest B Howard, executive vice president, Amer Med Assoc , quoted in House of Representative Hearings, Serial 91-93

²⁹ Letter by C Gordon Watson, executive director, Amer Dental Assn , in Senate Report 93-764